19. Describe PL/SQL subprograms and explain how procedures and functions are created and executed with examples.

20. Describe PL/SQL triggers in detail. Write a program to create a BEFORE INSERT trigger on a table.

APRIL/MAY 2025

23USC41 — RELATIONAL DATA BASE MANAGEMENT SYSTEM

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List any three characteristics of DBMS.

2. What are the different types of database models?

3. Define Primary Key with examples.

4. What is Functional Dependency?

5. Write a SQL Query using the ALTER statement in SQL.

6. Mention the use of COMMIT and ROLLBACK statements in SQL.

7. What is PL/SQL, and how does it differ from SQL?

8. Define cursor in PL/SQL and list its types.

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9. What is the purpose of loops in explicit cursors?

10. What is the difference between predefined exceptions and user-defined exceptions in PL/SQL?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Describe the advantages of using DBMS over traditional file systems.

Or

(b) Draw and explain a simple ER diagram for a library management system.

12. (a) Explain the structure of the Relational Model with an example.

Or

(b) Explain First Normal Form (1NF) and Second Normal Form (2NF) with examples.

13. (a) Write an SQL query to create a table with at least three constraints (Primary Key, Not Null, and Unique).

Or

(b) Explain Aggregate Functions (COUNT, MAX, MIN, AVG, SUM) with examples.

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14. (a) Explain the basic structure of a PL/SQL block with an example.

Or

(b) Write a PL/SQL program using a simple IF-ELSE statement.

15. (a) Explain different types of predefined exceptions in PL/SQL with examples.

Or

(b) What is an explicit cursor? Explain with an example program.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the three-tier architecture of DBMS with a diagram and explain each layer.

17. Describe Relational Algebra and explain Selection, Projection, Union, and Intersection operations with examples.

18. Explain the different DDL commands (CREATE, ALTER, DROP, RENAME, TRUNCATE) with syntax and examples.